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<i>(Also available in Canada from Penguin Books Can., in UK from Dorling Kindersley, and in AUS from Harper Collins)</i>	
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Electrician's Math

Calculator Corner

Directions: Use a calculator and the equations on this page to complete the chart below. Then, answer the questions at the bottom of the page.

Apply the following abbreviations to the formulas in the box below the chart: watts = W; kilowatts = KW; amperes = AMPS; volts = 110; lkw = 1,000W

Item	Watts/W	Kilowatts/KW (Round to the nearest tenth)	Amperes/AMPS (Round to the nearest tenth)
1. central air conditioner		5	
2. dishwasher			16.4
3. food warmer	500		
4. fryer			12
5. furnace		.3	
6. garbage disposer	900		
7. grill		1.3	
8. hot water heater	2500		
9. sun lamp			2.5

Formulas

$$\text{AMPS} \times 110 = \text{W}$$

$$\text{W} \div 1,000 = \text{KW}$$

$$\text{AMPS} \times .110 = \text{KW}$$

$$\text{KW} \times 1,000 = \text{W}$$

$$\text{W} \div 110 = \text{AMPS}$$

$$\text{KW} \div .110 = \text{AMPS}$$

Questions

- How many items can be used on a 15 ampere circuit? _____
- What items are they? _____

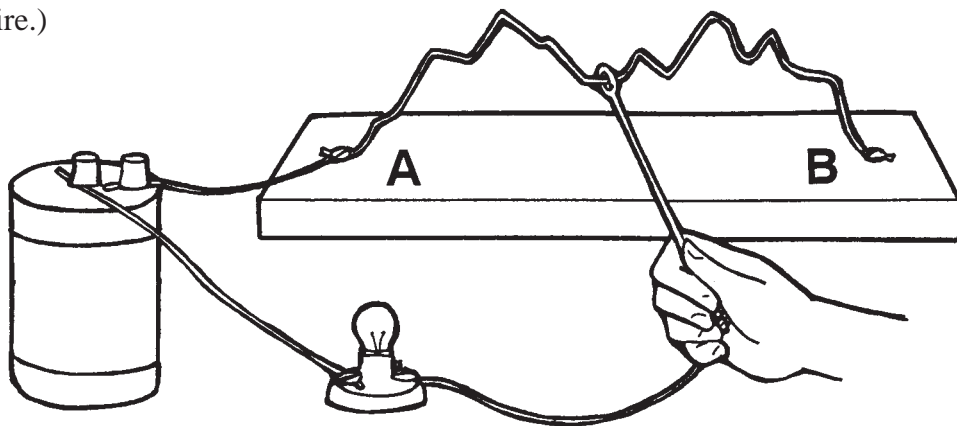
Steady As It Goes!

Build the following game board and test your skill at holding a steady hand as you play “Steady As It Goes!”

Materials: 1.5-volt dry cell; 3 feet (1 meter) of thin insulated wire; 1 foot (.3 meters) of stiff, irregularly-shaped bare wire; 6” (15 cm) of stiff straight wire with small loop at one end; 2 small nails; demonstration flashlight socket and bulb; small board (approximately 12”/30 cm) long for mounting game; screwdriver; hammer

Directions

1. Divide the insulated wire into three equal pieces. Strip the ends of each piece of wire.
2. Attach a wire to one dry cell terminal. Attach the other end of the wire to a light socket terminal. Attach a second wire to the other dry cell terminal. Secure the loose end of the wire to the small board with a nail. Label this connection point A.
3. Drive a nail into the opposite end of the board and label it point B.
4. Connect the third wire to the other end of light socket. Attach the loose end of this wire to the wire with the small loop on the end, as shown.
5. Place the stiff, irregularly-shaped wire through the small loop. Now attach this wire to the nails at points A and B. (This wire should rest above the board so the small wire loop can pass freely over the wire.)



How To Play the Game

Start the loop at A. Try to go to B without touching the bare wire. If you touch it, the bulb lights up and you lose. Have a contest to see who has steady hands. Good Luck!

Note: As you become more skilled at this game, you may wish to change the rules of play to one of the following:

1. Start at point A and move toward point B without causing the bulb to light. The player who reaches point B successfully, or the player who travels the greatest distance before lighting the bulb, is the winner.
2. Start at point A and move toward point B as quickly as you can without touching the bare wire. The player who reaches point B in the shortest amount of time is the winner.